We claim:

1. A force-resisting device for transmitting forces and dissipating and absorbing energy across a discontinuous structural element of a structure, the device comprising:

at least one active element, the active element having defined force versus deflection properties, wherein the active element is configured to provide a load path across a discontinuous structural element.

2. The force-resisting device according to Claim 1, wherein the active element is configured to be connected to a structure including the discontinuous structural element.

3. The force-resisting device according to Claim 1, wherein said load versus deflection property behaves initially elastic and then changes to plastic under higher applied loads.

4. The force-resisting device according to Claim 1, wherein said load versus deflection property behaves initially elastic, then changes to plastic under higher applied loads, then changes back to elastic under highest applied loads to limit deflection.

5. The force-resisting device according to Claim 1, wherein said load versus deflection property behaves initially elastic, then becomes progressively more resistant to load via plasticity under higher applied loads, thereby dissipating more energy as forces applied to said active element increase.

6. The force-resisting device according to Claim 1, wherein said load versus deflection property behaves initially elastic, then becomes progressively more resistant to load via combined elasticity and plasticity under higher applied loads, thereby dissipating more energy as forces applied to said active element increase.

7. The force-resisting device of Claim 1, wherein the force-resisting device is a building connector spanning a joint, the connector configured to transmit force and dissipate and absorb energy via defined force versus deflection properties.

8. A force-resisting device for transmitting forces and dissipating and absorbing energy across a discontinuous structural element of a structure, the device comprising:

at least one active element having at least a first end and a second end, the active element having defined force versus deflection properties and configured to transmit force and dissipate and absorb energy, wherein the first end of the active element is configured to be connected to a structure; and

at least one frame element disposed about a discontinuous structural element, wherein the frame element is configured to be connected to the second end of the active

element, the active element and the frame element are configured to resist forces and reduce stresses and replace stiffness, dissipation, and strength to the structure.

9. The force-resisting device according to Claim 8, wherein said frame element comprises at least one active element.

10. The force-resisting device according to Claim 8, wherein said discontinuous structural element is an opening and the frame elements are configured to encircle the opening.

11. A force-resisting device for transmitting forces and dissipating and absorbing energy across a discontinuous structural element of a structure, the device comprising:

at least one active element having at least a first end and a second end, the active element having defined force versus deflection properties and configured to transmit force and dissipate and absorb energy, wherein the first end of the active element is configured to be connected to a structure; and

at least one frame element configured to be connected to a discontinuous structural element, said frame element configured to be connected to the second end of the active element, wherein the active element and the frame element are configured to resist forces applied to the structure by transmitting forces across the discontinuous structural element.

12. The force-resisting device according to Claim 11, wherein said structure consists of a shear wall.

13. The force-resisting device according to Claim 11, wherein said discontinuous structural element consists of an opening.

14. The force-resisting device according to Claim 11, wherein said frame element comprises at least one active element.

15. The force-resisting device according to Claim 11, wherein one active element is attached to a structural sill plate.

16. A force-resisting device for transmitting forces and dissipating and absorbing energy across a discontinuous structural element of a structure, the device comprising:

at least one active element having at least a first end and a second end, the active element having defined force versus deflection properties and configured to transmit force and dissipate and absorb energy, the first end of the active element configured to be connected to a structure;

at least one reinforcement element, the reinforcement element configured to be connected to a structure; and

at least one frame element configured to be disposed about a discontinuous structural element, wherein the frame element is configured to be connected to the second end of the active element, wherein the active element, the frame element, and the reinforcement element are configured to resist forces applied to the structure by transmitting forces across the discontinuous structural element and are further configured to reduce stresses and replace stiffness, dissipation, and strength to the structure.

17. The force-resisting device according to Claim 16, wherein the structure is a shear wall.

18. The force-resisting device according to Claim 16, wherein the discontinuous structural element is an opening.

19. A method of restoring the stiffness, energy dissipation capacity, and strength of a structure containing a discontinuous structural element, the method comprising the step of:

transmitting forces across the discontinuous structural element, thereby providing load sharing across the discontinuity.

20. The method according to Claim 19 wherein the step of transmitting further includes attaching at least one active element disposed adjacent to the discontinuity formed within the structure.

21. A method for selecting a force-resisting device, the device configured to transmit loads and to dissipate and absorb energy, the method comprising:

selecting a structural element to be reinforced;

selecting a design configuration of a force-resisting device containing at least one active element;

selecting a design configuration for the active element;

building a computer generated finite element model of the force-resisting device with at least one active element, with at least one degree of freedom for transmitting force and dissipating and absorbing energy;

using the computer generated finite element model in a finite element analysis program to iterate the design of the active element to produce defined force versus deflection properties.